

Discussion Document

Enabling Drone Integration

6 April 2021

Executive summary

Our vision is to enable a thriving, innovative and safe drone sector

- 1 New Zealand has a long-term objective of safe integration of drones into the civil aviation system and ultimately within the wider transport system. This objective is rooted in the vision paper 'Taking Flight: an aviation system for the automated age' (Taking Flight), which sets the strategic direction of the cross government work programme on drones.¹
- 2 The future of our aviation system is where drones, as unmanned aircraft, operate safely among other aircraft and together with other ways of moving people and goods.
- 3 Drones can increase productivity across a wide range of sectors and critical services: from the surveying of property, to precision agriculture, as well as delivering medical supplies.
- 4 In order to get there, we need a number of building blocks and effective drone regulation is one. This will help us create a world in which drones can operate in the best way possible.

There are **Civil Aviation Rules (the Rules)** that apply to drone operations:

- **Part 101** contains 12 **prescriptive** rules that captures low risk operations
- **Part 102** is a **risk-based** certification framework that accommodates riskier operations (that fall outside the remit of Part 101) for which an Operator Certificate is required.

An effective commitment to drone integration is needed

- 5 Drones are being used more than ever for both work and play. This will only continue to grow as technology gets better and more affordable. There is the key opportunity to develop a sustainable drone environment which will realise economic, innovation and social benefits.²
- 6 To succeed, we need to ensure we have everything we need for a larger number of drones to be used as safely as ever.

¹ For more information on *Taking Flight*, visit: <https://www.transport.govt.nz/area-of-interest/technology-and-innovation/taking-flight/> .

² See *Drone Benefit Study*: <https://www.transport.govt.nz/area-of-interest/technology-and-innovation/drone-benefit-study/>

How do we propose to achieve this?

- 7 The Ministry of Transport and the Civil Aviation Authority (CAA) have been working together to come up with ways to ensure we keep up with changing technology, best practices while maintaining safety and security of people and property, both in the air and on the ground.
- 8 We have four objectives:
- We want to encourage people to use drones safely and securely and to be accountable if they use them irresponsibly.
 - We want people to get the most out of drones and use them in exciting and innovative ways.
 - We want to lay the foundation for drones to become a familiar feature of the transport system.
 - We want people of New Zealand to feel confident that drones are being used responsibly in their communities and accept them in their day-to-day lives.

We propose to introduce a series of regulatory measures that together will enable the integration of drones into the aviation system

- 9 This series of measures include:
- **Rules updates:** we aim to make the Rules clearer, fairer and future focused. Major Rules updates would only occur if the series of regulatory measures is implemented. These include a standalone Rule Part that would cover rules for remotely piloted aircraft (RPA) rather than the current Part 101 Rule that also include other categories of unmanned aircraft like rockets; the removal or relaxation of needing consent to fly over people or private property; and reviewing the minimum flight distance from aerodromes currently set at four kilometres. Minor Rules updates would introduce definitions and clarify Rules where needed.
 - **basic pilot qualification:** we aim to improve knowledge and awareness of rules. Upon gaining a basic pilot qualification, you can fly a drone under Part 101, supervise drone operation by an unqualified person (if you are 16 years and over) and fly drones up to 25kg. The test would be simple and completed online, with no minimum age.
 - **drone registration:** we want to be able to identify drones and their owners in order to ensure that important information can be communicated to operators, and improve enforcement. If you own a drone that weighs 250 grams or over, you would have to register it. This would apply to individuals who are 14 years and over, and businesses or organisations. Registration would be online and user friendly, issuing a unique number to be displayed on the drone.

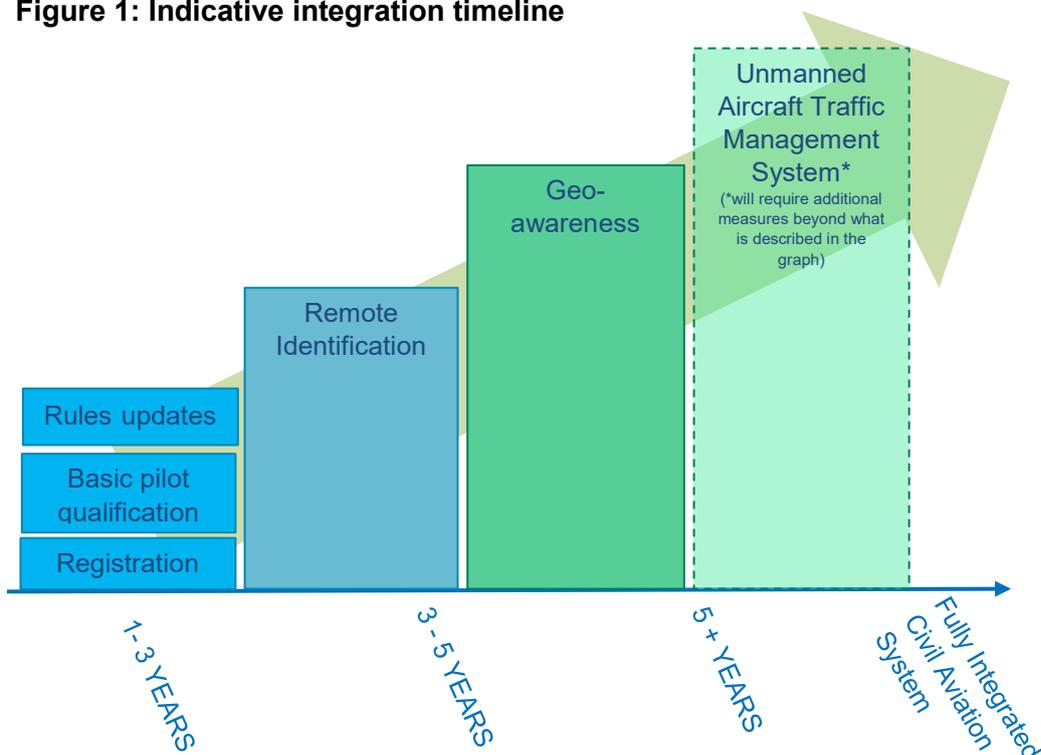
10 Following implementation of this first set of measures, we intend to consider the following additional measures. We would undertake consultation which would set out further details on these proposals.

- **remote identification:** we want to enhance situational awareness for drone operators and other parties through effective drone identification, and improve enforcement. We propose introducing the mandatory use of remote identification capability on certain drones during flight. It refers to an on-board system that would enable the transmission of drone identification (i.e. drone registration number) and real-time information about the flight, that third parties can receive, e.g. through cell phone Wi-Fi or Bluetooth.
- **geo-awareness:** we aim to make it easier for drones operators to know where they can or cannot fly. Improved situational awareness would also benefit other parties and help protect sensitive sites and infrastructures. This requires the creation of a digital map that provides all necessary aeronautical information for drone operations. Certain drones used would also be required to use geo-awareness technology.

These measures would be gradually implemented and their efficiency and benefits would be maximised once they are all in place

11 We intend to introduce these changes gradually as shown in Figure 1. Although complementary, these regulatory measures require separate implementation. Each of them has distinct benefits and challenges that are identified further in the chapters of the discussion document.

Figure 1: Indicative integration timeline



We are looking to address problems related to aviation safety and security, as well as privacy, as drones become more accessible and popular



Lack of compliance: while Rules have been in place since 2015, still too many people get it wrong.



Ineffective enforcement: we don't know 'who is flying what', which makes it hard to enforce rules when required.



Suitability of the current regulatory framework: some Rules are no longer working as intended and do not help achieve the best safety outcomes.



System sustainability: our current aviation system and infrastructure prevent us from getting the most out of drones.

Benefits, costs and risks associated with the proposed approach

- 12 It is too early to assess all benefits and costs that come with the series of measures, but we have an early indication of what those are.

Benefits

- 13 We expect to see both short and long term benefits from these measures:
- 14 The **short-term benefits** identified are:
- fewer illegal airspace incursions
 - fewer personal injuries and property damages
 - more effective and timely enforcement, resulting in lower investigation costs
 - improved confidence and acceptance of drones
- 15 The **long-term benefits** identified are:
- a foundation for safely integrating drones into the aviation system
 - enabling more complex drone operations, such as Beyond Visual Line of Sight (BVLOS) operations, resulting in more uses and services
 - creation and improvement of markets leading to new job opportunities
 - making it easier for people wanting to use drones.

Costs

System costs

- 16 Costs to Government relate to the implementation of the measures. All the measures would have administrative, digital infrastructure, education and publicity costs.

- 17 It is too early to know how much these measures will cost. The proposed measures will allow drones users to contribute more fairly to the aviation system.

Compliance costs

- 18 Drone manufacturers and retailers may incur costs from the proposed measures if the measures decrease drone uptake, and therefore drone sales, and if it requires them to build in additional software or hardware on board the aircraft.
- 19 Similarly, drone operators would have to spend time and resource complying with the proposed measures.

Risks

- 20 If we do not act now, we run the risk of making it more difficult to catch-up to where we need to be. The existing problems would not be solved and drone integration would simply not happen. It is important to keep up with the evolution and growth of the drone sector and to ensure our regulations remain effective.

How to have your say

We are seeking your feedback on the proposed approach to enhance the New Zealand drone regulatory regime and enable drone integration. This discussion document does not represent Government policy nor does it predetermine the options the Government may consider when making final decisions.

Written submissions must arrive by 5:00 pm Friday 21 May 2021.

Submissions can be sent to the Ministry at:

enablingdroneintegration@transport.govt.nz

or

Enabling Drone Integration - Consultation
Ministry of Transport
PO Box 3175
WELLINGTON 6140

You can also have your say online at www.transport.govt.nz/drone-consultation

Please refer to the discussion document for further information on making submissions.